

Service Manual

Personal Cellular Telephone



G1800

Version: 1A

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.

Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Every care has been taken to ensure that contents of this service manual give an accurate representation of the equipment. However, DARTS TECHNOLOGIES CORP. accepts no responsibility for inaccuracies which may occur and reserves the right to make changes to the design without prior notice.

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IMPORTANT

This document is intended for use by qualified service personnel only.

Company Policy

Our policy is of continuous development; details of all technical modifications will be included with service bulletins.

While every endeavor has been made to ensure the accuracy of this document, some errors may exist. If any errors are found by the reader, please notified it to company

Warnings and Cautions

Please refer to the phone's user guide for instructions relating to operation, care and maintenance including important safety information. Note also the following:

Warnings:

1. CARE MUST BE TAKEN ON INSTALLATION IN VEHICLES FITTED WITH ELECTRONIC ENGINE MANAGEMENT SYSTEMS AND ANTI-SKID BRAKING SYSTEMS. UNDER CERTAIN FAULT CONDITIONS, EMITTED RF ENERGY CAN AFFECT THEIR OPERATION. IF NECESSARY, CONSULT THE VEHICLE DEALER/MANUFACTURER TO DETERMINE THE IMMUNITY OF VEHICLE ELECTRONIC SYSTEMS TO RFENERGY.
2. THE HANDPORTABLE TELEPHONE MUST NOT BE OPERATED IN AREAS LIKELY TO CONTAIN POTENTIALLY EXPLOSIVE ATMOSPHERES EG PETROL STATIONS (SERVICE STATIONS), BLASTING AREAS ETC.
3. OPERATION OF ANY RADIO TRANSMITTING EQUIPMENT, INCLUDING CELLULAR TELEPHONES, MAY INTERFERE WITH THE FUNCTIONALITY OF INADEQUATELY PROTECTED MEDICAL DEVICES. CONSULT A PHYSICIAN OR THE MANUFACTURER OF THE MEDICAL DEVICE IF YOU HAVE ANY QUESTIONS. OTHER ELECTRONIC EQUIPMENT MAY ALSO BE SUBJECT TO INTERFERENCE.

Cautions:

1. Servicing and alignment must be undertaken by qualified personnel only.
2. Ensure all work is carried out at an anti-static workstation and that an anti-static wrist strap is worn.
3. Ensure solder, wire, or foreign matter does not enter the telephone as damage may result.
4. Use only approved components as specified in the parts list.
5. Ensure all components, modules screws and insulators are correctly re-fitted after servicing and alignment. Ensure all cables and wires are repositioned correctly.

1. INTRODUCTION

1.1. Purpose of the Manual

This service manual contains the information and procedures required for instilling, operating and servicing the LG GSM Personal Cellular Mobile Telephone system operating on GSM Digital Cellular Networks.

1.2. Structure of the manual

The manual is structured to provide service engineering personnel with the following information and procedures:

1. General and technical information – provides a basic understanding of the equipment, kits and options, together with detailed information for each of the major component parts.
2. Installation and operating information – provides instructions for unpacking, installing and operating the equipment.
3. Servicing information – provides complete instructions for testing, disassembly, and reassembly of the product. Step-by-step troubleshooting information is given to enable the isolation and identification of a malfunction, and thus determine what corrective action should be taken. The test information enable verification of the integrity of the equipment after any remedial action has been carried out.
4. Illustrated parts list – provides to enable the identification of all cosmetic and some electrical components, for the ordering of replacement parts.

1.3. Servicing Responsibilities

The procedures described in this manual must performed by qualified service engineering personnel, at an authorized service center.

The service engineering personnel are responsible for fault diagnosis and repair of all equipment described in this manual.

2. GENERAL DESCRIPTION

2.1. General

This section provides general description and kit composition detailed for the GSM Hand portable Telephone system and optional kits.

2.2. Features

The LG Telephone Model G1800 is a high performance small, light handset for business and domestic use. The following features are provided:

1. Triple Codec which includes Half Rate / Full Rate and Enhanced Full Rate (EFR) speech codec.
2. Tri Band E-GSM900 and DCS1800 operation.
3. GPRS Service.
4. T9 Text Entry.
5. Voice Ringer.
6. Wireless Application Protocol (WAP) Browser.
7. Backup Battery.
8. Downloadable polyphonic melody ring tones.
9. Clock, Calculator and Currency Converter.

2.3. Hand portable Main Kits

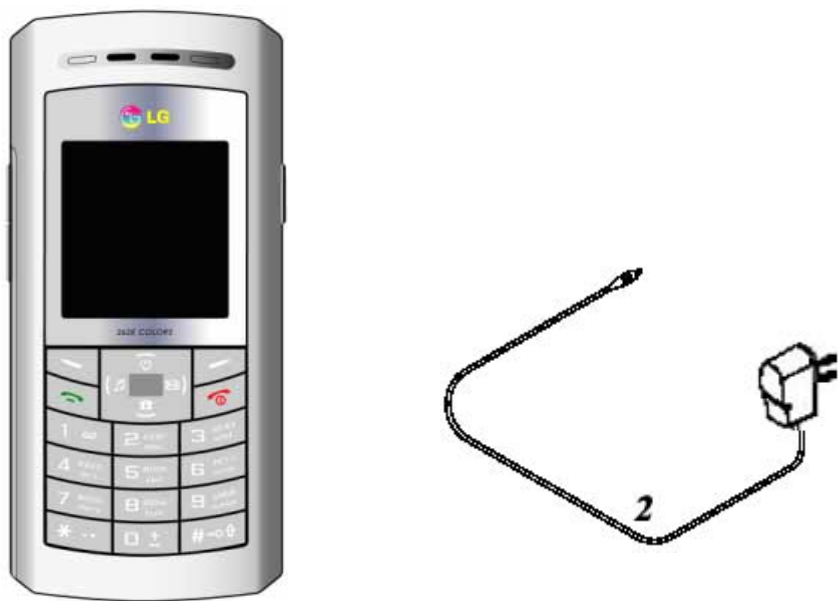


Figure 2.1: Hand portable Main Unit Kit Content

Item	Description	Part Number
1	Handset	G1800
2	AC Travel Charger	TA-18GR
3	Standard Battery (Li-Ion 720mAh)	SBPL0076310

3. OPERATING INSTRUCTIONS

3.1. General

This section provides a brief guide to the operation and facilities available on the telephone handset. Refer to the Operating Instruction supplied with the telephone for full operational information.

3.2. Liquid Crystal Display



















The telephone handset has a graphical chip on glass display. The following icons are available:



Figure 3.1: Crystal Display

1. Top of the screen shows Essential Indicators. (See table below)
2. Next line displays the operator name
3. In the middle screen shows date/time.
4. To enter **Menu** press left selection key.
5. To use **Name** in the phone book press right selection key.

Essential indicators

 	Indicates signal strength and alternate line service.
	Shows handset current battery charge strength.
	Indicates the phone keypad is locked.
	Indicates the profiles alert type is Ring
	Indicates the profiles alert type is vibration.
	Indicates the profiles alert type is vibration and ring.
	Indicates the profiles alert type is vibration then ring.
	Indicates the profiles alert type is light only.
	The Alarm clock is set on.
Rm	Indicates “roaming”.
	Indicates missed call.
	Indicates Broadcast set on.
	
	
	Indicates new text messages.
	Indicates call diverted is set on
	
	Indicates record function on

3.3. Location of Controls

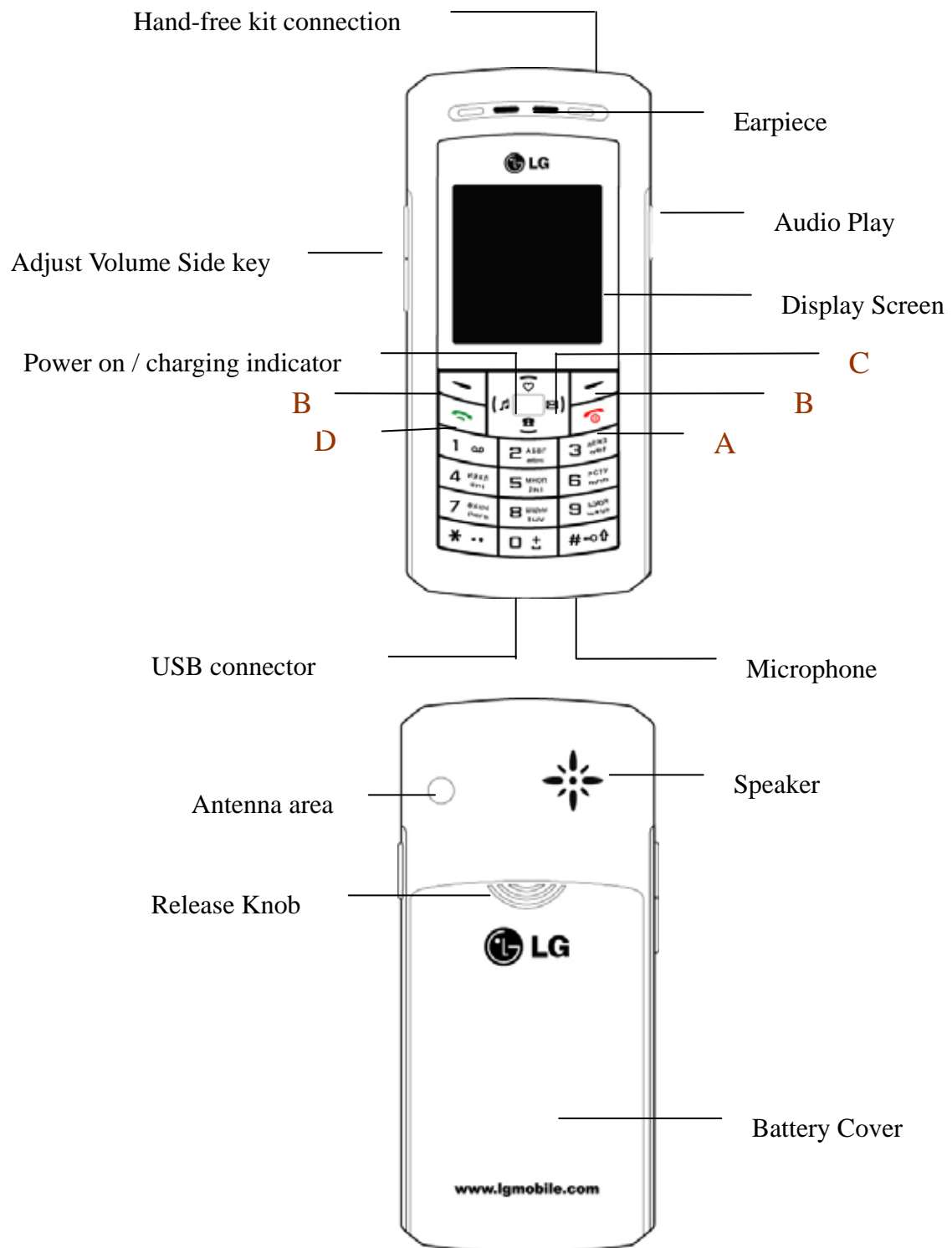


Figure 3.2: Location of Controls

3.4. Alpha Entry

3.4.1. Character Set / Key Assignments

There are 20 keys on G1800, including 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, *, #, SEND, END, Left-Soft-Key (LSK), Right-Soft-Key (RSK), 4-way Navigation Key.

The following ID drawing is only used for Keypad Layout's reference.



Figure 3.3:G1800 Keypad Layout

● Key Function List

✦ A. Power/End key.

- Switch phone on and off. Also, ends a call or Exit from any function and back to Idle mode.

✦ B. Selection Key

- The function of the keys depends on the text shown on the display above the keys. For example, **Menu** and **Name** in Idle mode.

✦ C. Navigation Key

- Use for quick access to phone functions in Idle mode.
 - ◆ Up key: Access to the **Favorites** menu.
 - ◆ Down key: Access to the **Phone book** menu
 - ◆ Left key: Access to the **Profiles** menu
 - ◆ Right key: Access to the **Messages** menu
- Scroll through names and numbers stored in the phone book or through the phone's menus, submenus, and option list.

✦ D. Send/Answer Key

- Make and answer calls; press in Idle mode to see recent dialed calls.
- 0-9 input number and character

✦ E. Left Side Key

- Adjust handset volume

✦ F. MP3 Play Key

The shortcut to enter audio player in Idle mode.

3.5. Public Man Machine Interface (MMI)

3.5.1. Reading the Phonebook Memory Location

<MEMORY LOCATION>

Leading zeros can be left out of the location number, e.g. 007 can be 7.

3.5.2. Features for Factory Service

Features	Description
Production or service mode	By *#32787# to enter production mode 1. Contrast 4.Back light 2. Vibrator 5.Keypad 3. Mic 6.Speaker
Display Software version	Pressing “*#2945#” in idle mode
Display IMEI	By *#06#
Enter Engineer Mode	By *#3646633#
Reset to default language	*#0000#[SEND]
Set language to Russian	*#0007#[SEND]
Set language to English	*#0044#[SEND]

3.5.3.Tips for Call Option

A call can be connected to any single caller by pressing Option key. When user press Option key during active call, user can choose one of those functions from the list:




- Hold: put a call on.
- Retrieve: reconnect a holding call.
- Retrieve All: reconnect all holding call.
- Swap: switch between the call on hold and active.
- Conference: make a multi-party conversation.
- Transfer: transfer a call.
- Spilt: to suspend the multi-party call.
- End Single: end one of conference call.
- End All: end a multi-party call.
- End: End a call.
- Mute: mute the call during the conversation.
- New Call: make a new call during an active call.
- Phonebook: shortcut to phonebook menu.
- SMS: shortcut to Message menu.
- Sound Recorder: shortcut to Sound Recorder submenu.
- DTMF: set **On** / **Off** for DTMF (Dual Tone Multi-Frequency) tone dialing system.

3.6. Security Procedure

Features	Description
PIN 1 and 2	PIN activate, changing and deactivation
PIN control	Menu entry to change PIN2/phone code
Phone code	Manufacture defined codes to protect phone (4 - 8 digits). Changeable by user.
FDN	Fixed Dialled Number for limited Dialling
BDN	Barred Dialled Number for limited Dialling

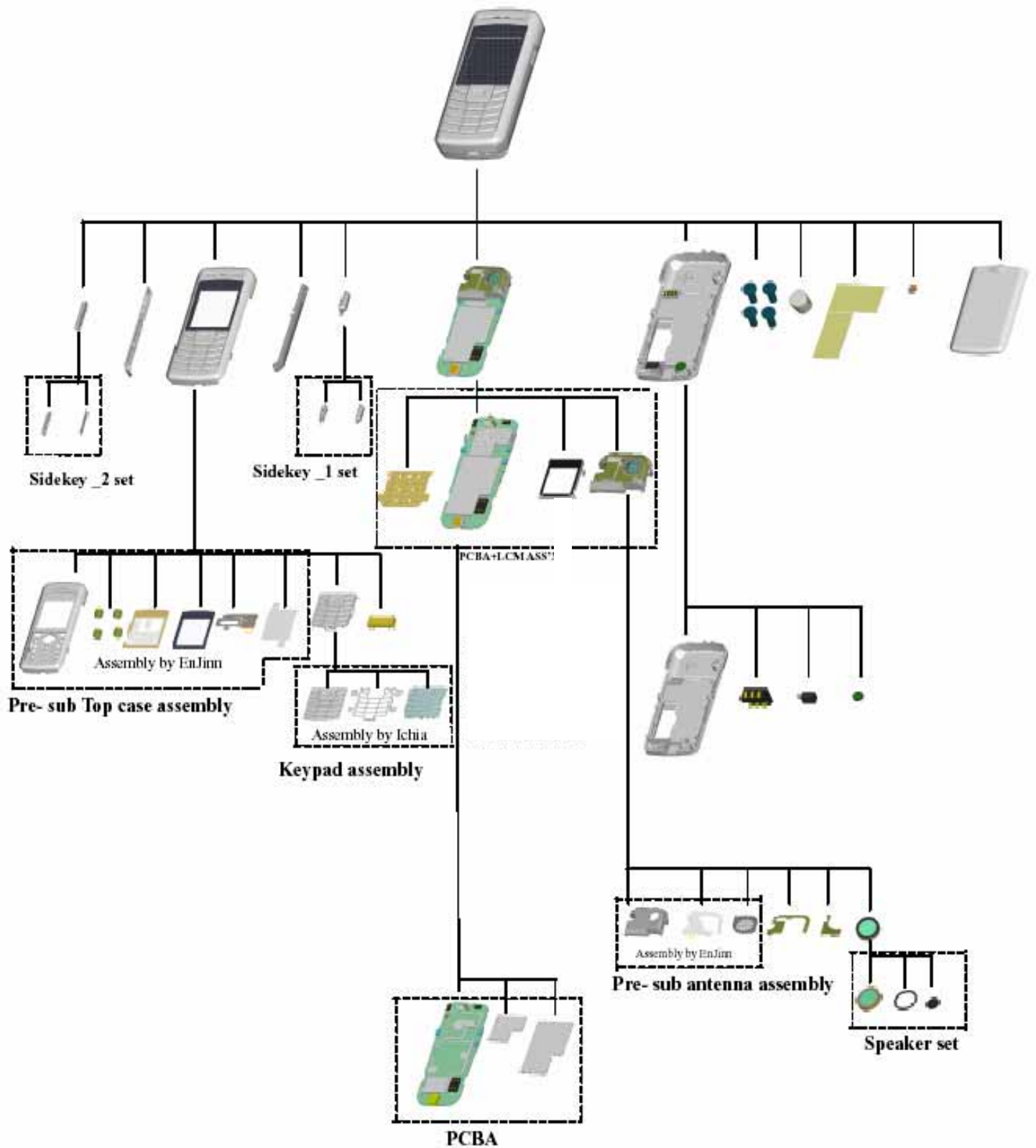
3.7. Troubleshooting

The user is given the following information and advised to contact the dealer if the problems persist:

Problem	Cause	Remedy
Telephone will not switch on		Check that the battery pack is fully charged and correctly connected to the telephone.
Extremely short battery life for a new battery pack	The network in use and the condition of the battery pack can affect battery life.	Avoid areas of poor reception. Ensure batteries are fully charged.
Short battery life for an old battery pack	The battery pack was worn out.	Replace with a new one.
The battery level indicator  does not light when charging	If a battery is deeply discharged it will take a short time before there is sufficient owner in the telephone to light the battery level indicator  .	Leave to charge for several minutes in temperatures between +5°C and + 35°C.
Calls cannot be made	The telephone is locked.	Unlock the telephone (Menu: Security: Phone Lock).
	Outgoing calls are barred.	Disable the outgoing call barring (Menu: Security: Call Bar).
	The telephone is not registered to a network.	Move to a coverage area and operate the telephone after it has registered with a network.
Calls cannot be made from Fixed Dial Store		Check that SIM supports Fixed Dial Check if the Fixed Dial is switched on (Menu: Security: Fixed Dial). Check the telephone number is stored in the Fixed Dial.
Calls cannot be received	The telephone is not switched on.	Switch the telephone on.
	Incoming calls are barred.	Disable the incoming call barring (Menu: Security: Call Bar).
	The telephone is not registered to a network.	Move to a coverage area and operate the telephone after it has registered with a network.
Emergency calls cannot be made	User's phone is not in a GSM coverage area.	Check that the antenna symbol  is displayed. Move to coverage are and operate the telephone when the antenna symbol is displayed.
Telephone umbers Cannot be recalled	The telephone is locked.	Unlock the telephone (Menu: Security: Phone Lock).
	Fixed Dial is switched on	Switch off Fixed Dial (Menu: Security: Fixed Dial).

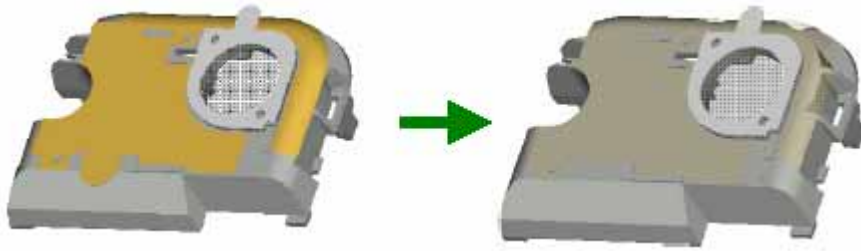
4. ASSEMBLY INSTRUCTIONS

4.1. Assembly Structure



4.2. Antenna sub assembly

- To tear off paper liner from bracket sticker.



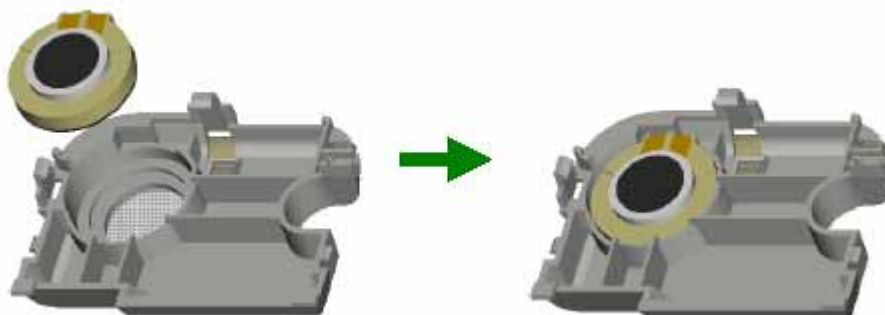
- To add antenna bracket on antenna base.



- To add antenna bracket on antenna base.



- To add set (refer to appendix 1) on antenna base.

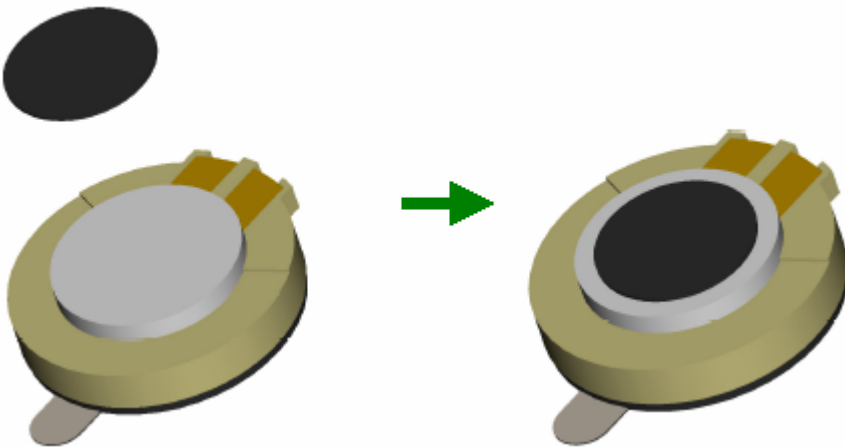


4.2.1. Appendix 1 Speaker module sub assembly

- To stick speaker rubber on speaker.

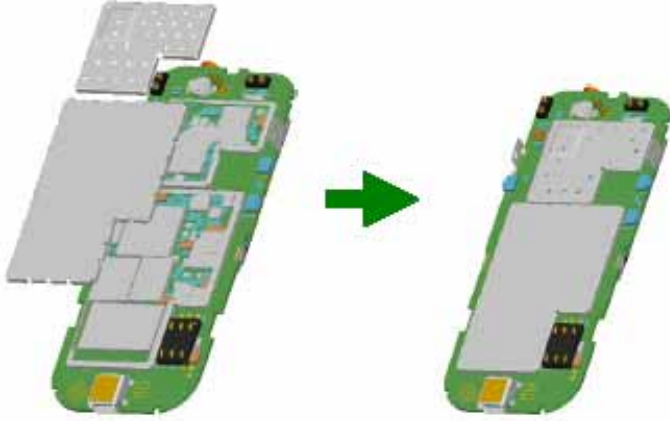


- To stick speaker gasket on speaker rear side.

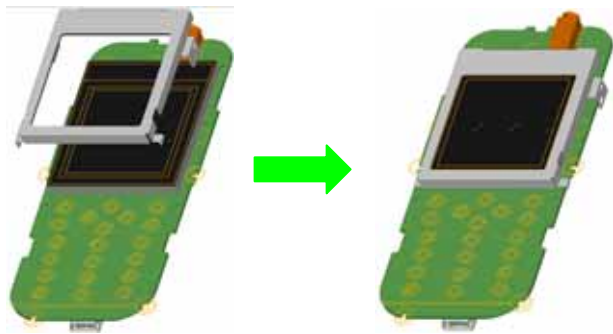


4.3. PCB sub assembly

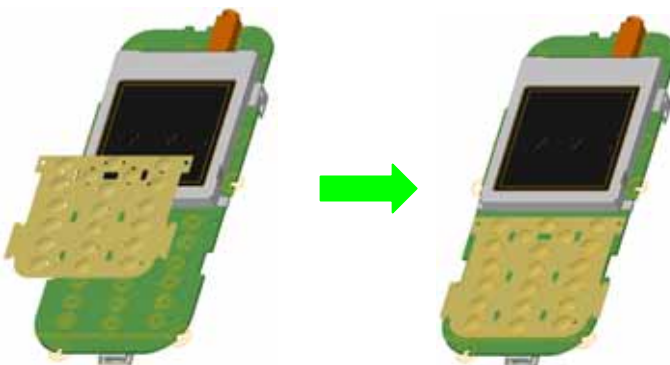
- To add shield cover on PCB.



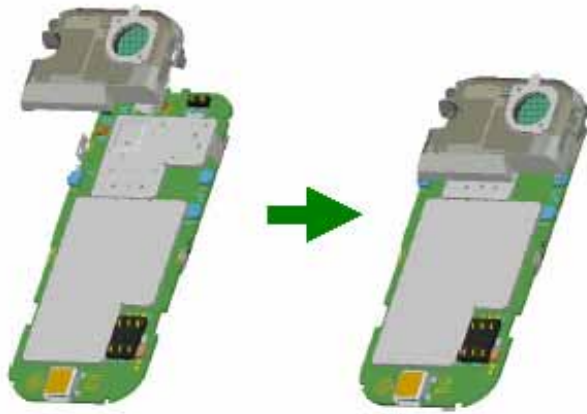
- To hook LCM bracket assembly on PCB.



- To stick metal dome film on PCB.



- To add antenna module on PCB.

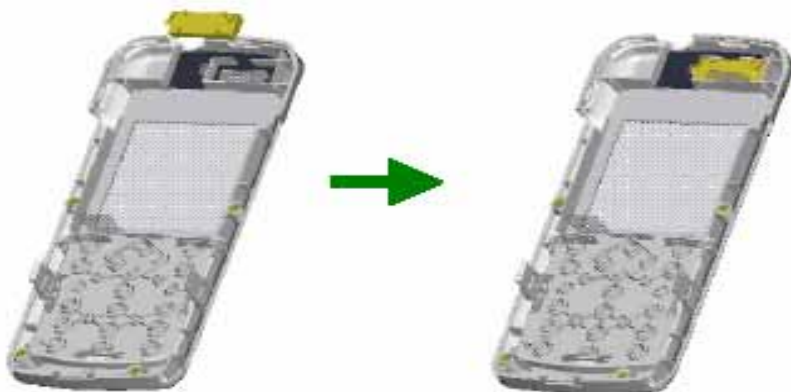


4.4. Top case sub assembly

- To add keypad assembly on top case pre-sub assembly (refer to appendix 2).

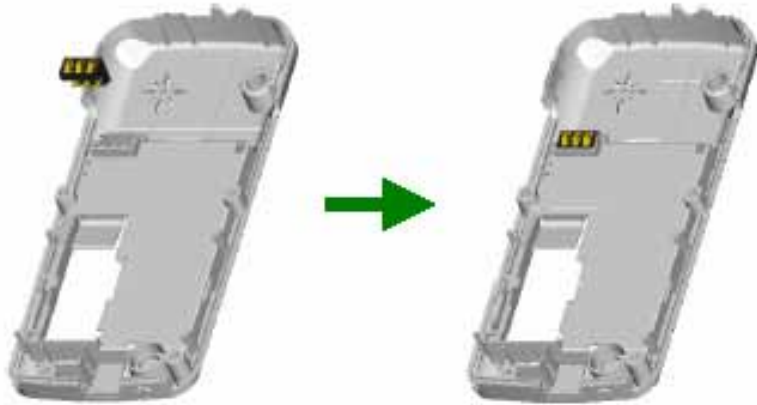


- To add receiver on top case pre-sub assembly.



4.5. Bottom case sub assembly

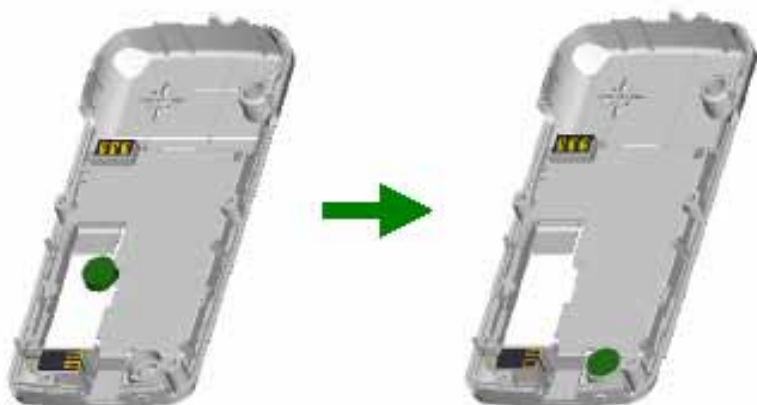
- To add battery connector on bottom case.



- To add vibrator on bottom case.

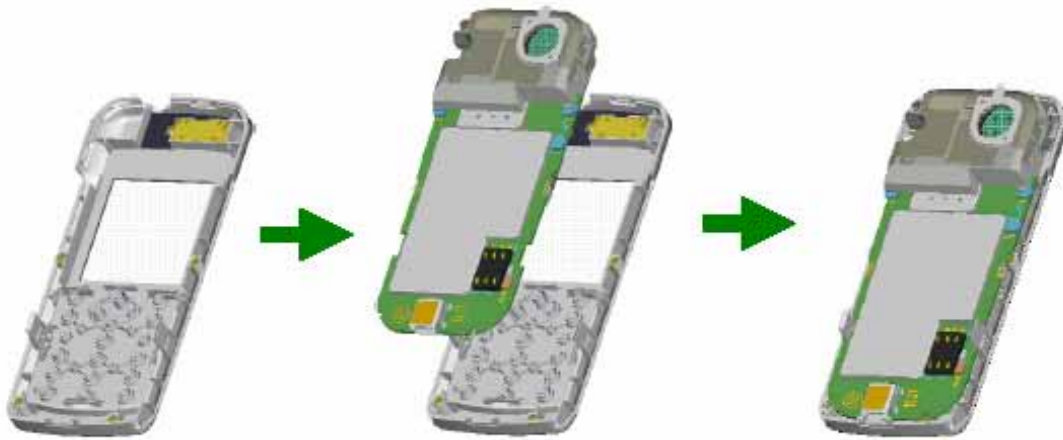


- To add vibrator on bottom case.



4.6. Main assembly

- To tear off protect film form lens inner side and PCB assembly on top case.



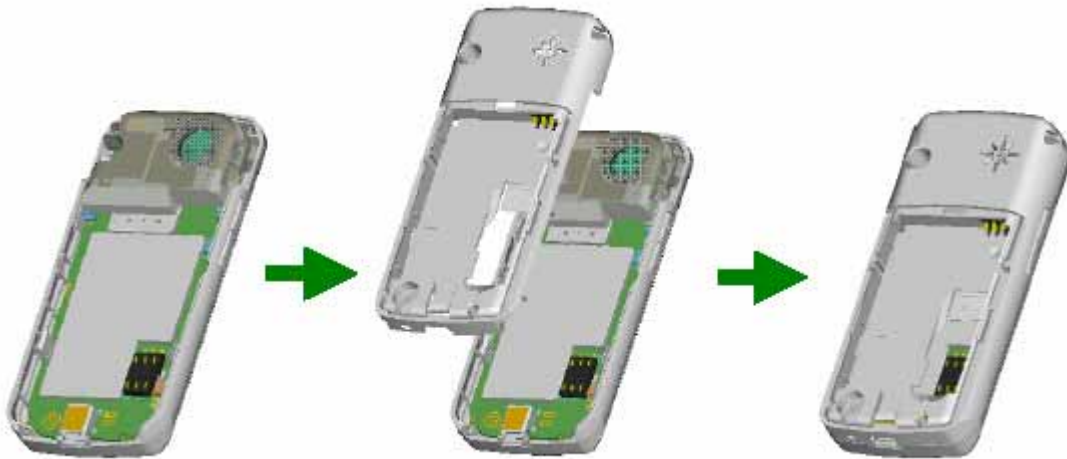
- To add side key_1 and strip_1 on main assembly left side.



- To add side key_2 and strip_2 on main assembly right side.



- To add bottom sub assembly on main assembly.



- To stuff RF rubber cap into main assembly.



- To fasten screw on main assembly.



- To stick IMEI / SN label on main assembly.



- To stick seal label on screw hole as illustration.



- To add battery cover on main assembly.



5. TECHNICAL SPECIFICATION

5.1. TX Characteristics

All data is applicable to E-GSM900 and DCS1800 except where stated.

5.1.1. Frequency Error

± 0.1 ppm max. relative to base station frequency.

5.1.2. Modulation Phase Error

RMS: Equal to or less than 5°

Peak: Equal to or less than 20°

5.1.3. Output RF Spectrum due to Modulation

Offset from Centre Frequency (kHz)	Maximum Level Relative to Carrier (9dB)
±100	+ 0.5
±200	- 30
±250	- 33
±400	- 60
±600 to 1800	- 60

5.1.4. Output RF Spectrum due to Switching Transients

Offset from Centre	Maximum Level (dBm)		
Frequency (kHz)	E-GSM 900	DCS 1800	
±400	- 19	- 22	
±600	- 21	- 24	
±1200	- 21	- 24	
±1800	- 24	- 27	

Measurement conditions for output RF spectrum measurements:

Frequency Spen	0 Hz
Measurement Bandwidth:	30 kHz
Video Bandwidth:	30 kHz (modulation)
100 kHz (switching)	
Average (Modulation)	Over 200 burst
Peak Hold (Switching)	Over 10 burst

5.1.5. Spurious Emissions at Antenna Connector

Frequency range	Power level in dBm		
	GSM 400, GSM 700, GSM 850, GSM 900	DCS 1 800	
9 kHz to 1 GHz	-36	-36	
1 GHz to 12,75 GHz	-30		
1 GHz to 1 710 MHz		-30	
1 710 MHz to 1 785 MHz		-36	
1 785 MHz to 12,75 GHz		-30	

Frequency range	Frequency offset	Filter bandwidth	Approx video bandwidth
100 kHz to 50 MHz	-	10 kHz	30 kHz
50 MHz to 500 MHz excl. relevant TX band: GSM 450: 450,4 MHz to 457,6 MHz; GSM 480: 478,8 MHz to 486 MHz, and the RX bands: For GSM 400 MS: 460,4 MHz to 467,6 MHz; 488,8 MHz to 496 MHz.	-	100 kHz	300 kHz
500 MHz to 12,75 GHz, excl. relevant TX band: GSM 750: 777 MHz to 792 MHz GSM 850: 824 MHz to 849 MHz; P-GSM: 890 MHz to 915 MHz; E-GSM: 880 MHz to 915 MHz; DCS: 1 710 MHz to 1 785 MHz, PCS 1 900: 1 850 MHz to 1 910 MHz; and the RX bands: For GSM 400 MS, GSM 900 MS and DCS 1 800 MS: 925 MHz to 960 MHz; 1 805 MHz to 1 880 MHz. For GSM 700 MS, GSM 850 MS and PCS 1 900 MS: 747 MHz to 762 MHz; 869 MHz to 894 MHz; 1 930 MHz to 1 990 MHz	0 to 10 MHz ≥ 10 MHz ≥ 20 MHz ≥ 30 MHz (offset from edge of relevant TX band)	100 kHz 300 kHz 1 MHz 3 MHz 3 MHz	300 kHz 1 MHz 3 MHz 3 MHz
relevant TX band:			
GSM 450: 450,4 MHz to 457,6 MHz	1,8 to 6,0 MHz	30 kHz	100 kHz

Frequency range	Frequency offset	Filter bandwidth	Approx video bandwidth
GSM 480: 478,8 MHz to 486 MHz GSM 750: 777 MHz to 792 MHz GSM 850: 824 MHz to 849 MHz P-GSM: 890 MHz to 915 MHz E-GSM: 880 MHz to 915 MHz DCS: 1 710 MHz to 1 785 MHz	> 6,0 MHz	100 kHz	300 kHz
<p>NOTE 1: The excluded RX bands are tested in sub clause 13.4.</p> <p>NOTE 2: The filter and video bandwidths, and frequency offsets are only correct for measurements on an MS transmitting on a channel in the Mid ARFCN range.</p> <p>NOTE 3: Due to practical implementation, the video bandwidth is restricted to a maximum of 3 MHz.</p>			

5.1.6. Residual Peak Power

Equal to or less than 70 dBc (BW = 300 kHz)

5.2. Rx Characteristics

5.2.1. Sensitivity

E-GSM 900 Full Rate Speech

The reference sensitivity performance in terms of frame erasure, bit error, or residual bit error rates (whichever is appropriate) is specified in the following table, according to the propagation conditions.

Channels	Propagation Conditions TUhigh		Propagation Conditions RA		Propagation Conditions HT		Static Conditions	
	Test Limit error rate %	Minimum No. of samples	Test Limit error rate %	Minimum No. of samples	Test Limit error rate %	Minimum No. of samples	Test Limit error rate %	Minimum No. of samples
TCH/FS FER	6.742 0.42	8900					0.122	164000
Class Ib(RBER)	8.33	1000000	7.5	24000	9.333	60000	0.41	2000000
Class II(RBER)		120000					2.439	8200

The reference sensitivity level is $< -102\text{dBm}$.

E-GSM 900 Half Rate Speech

The reference sensitivity performance in terms of frame erasure, bit error, or residual bit error rates (whichever is appropriate) is specified in the following table, according to the propagation conditions.

Channels	Propagation Conditions TUhigh		Propagation Conditions RA		Propagation Conditions HT	
	Test Limit error rate %	Minimum No. of samples	Test Limit error rate %	Minimum No. of samples	Test Limit error rate %	Minimum No. of samples
TCH/HS FER	4.598	13050				
TCH/HS Class Ib(BFI=0)	0.404	148500				
TCH/HS Class II(BFI=0)	7.725	25500	8.500	20000	7.600	20000
TCH/HS(UFR)	6.250	9600				
TCH/HSL class Ib((BFI or UFI)=0)	0.269	227000				

DCS 1800 Full Rate Speech

The reference sensitivity performance in terms of frame erasure, bit error, or residual bit error rates (whichever is appropriate) is specified in the following table, according to the propagation conditions.

Channels	Propagation Conditions TUhigh		Propagation Conditions RA		Propagation Conditions HT		Static Conditions	
	Test Limit error rate %	Minimum No. of samples	Test Limit error rate %	Minimum No. of samples	Test Limit error rate %	Minimum No. of samples	Test Limit error rate %	Minimum No. of samples
TCH/FS FER	6.742	8900					0.122	164000
Class Ib(RBER)	0.42	1000000	7.5	24000	9.333	60000	0.41	2000000
Class II(RBER)	8.33	120000					2.439	8200

The reference sensitivity level is < - 102dBm.

DCS 1800 Half Rate Speech

The reference sensitivity performance in terms of frame erasure, bit error, or residual bit error rates (whichever is appropriate) is specified in the following table, according to the propagation conditions.

Channels	Propagation Conditions TUhigh		Propagation Conditions RA		Propagation Conditions HT	
	Test Limit error rate %	Minimum No. of samples	Test Limit error rate %	Minimum No. of samples	Test Limit error rate %	Minimum No. of samples
TCH/HS FER	4.598	13050				
TCH/HS Class Ib(BFI=0)	0.404	148500				
TCH/HS Class II(BFI=0)	7.725	25500	8.500	20000	7.600	20000
TCH/HS(UFR)	6.250	9600				
TCH/HSL class Ib((BFI or UFI)=0)	0.269	227000				

6. BLOCK DIAGRAM

6.1. G1800 Base band Hardware Typical application and Block Diagram

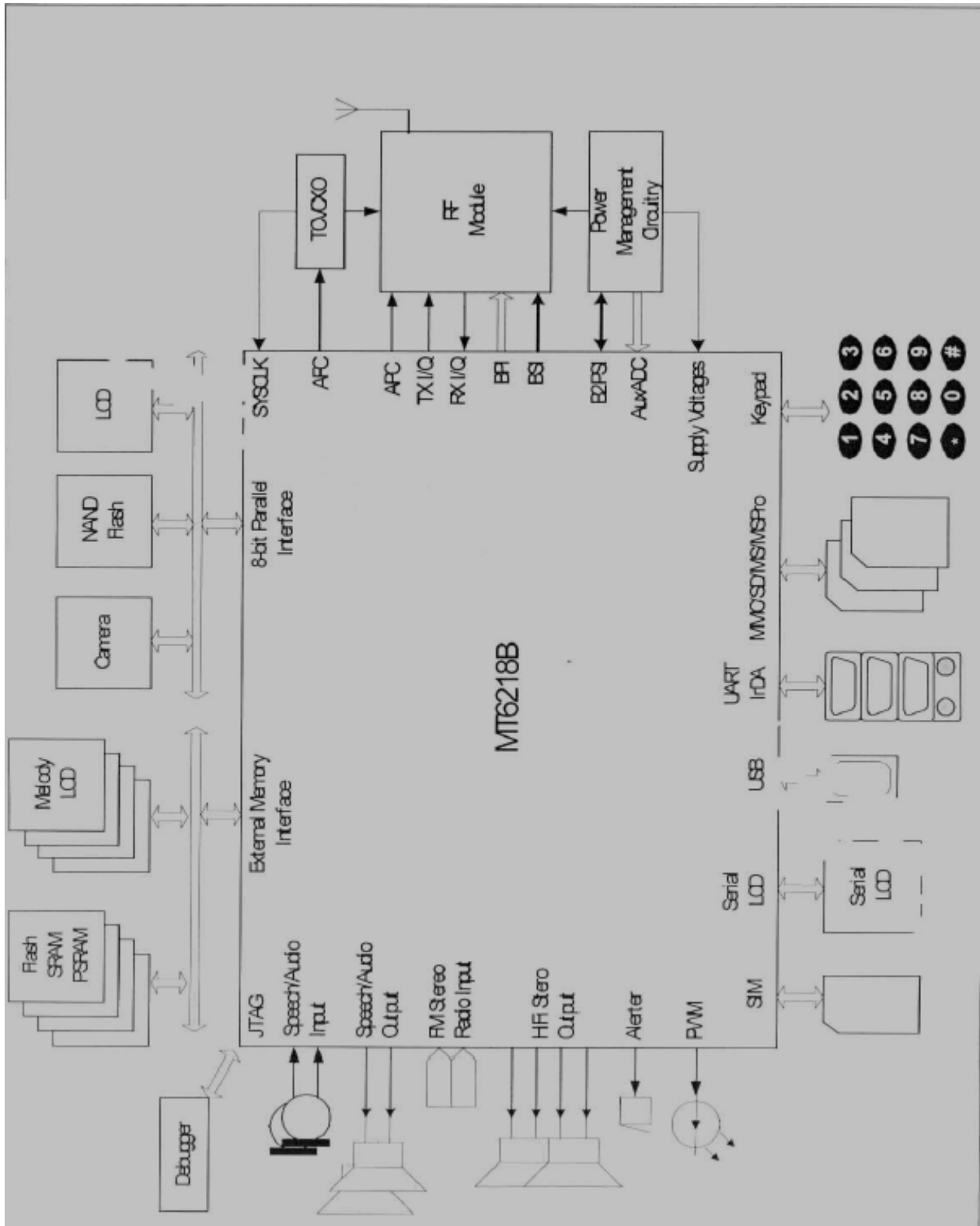


Figure 6.1: Typical application of MT6218B

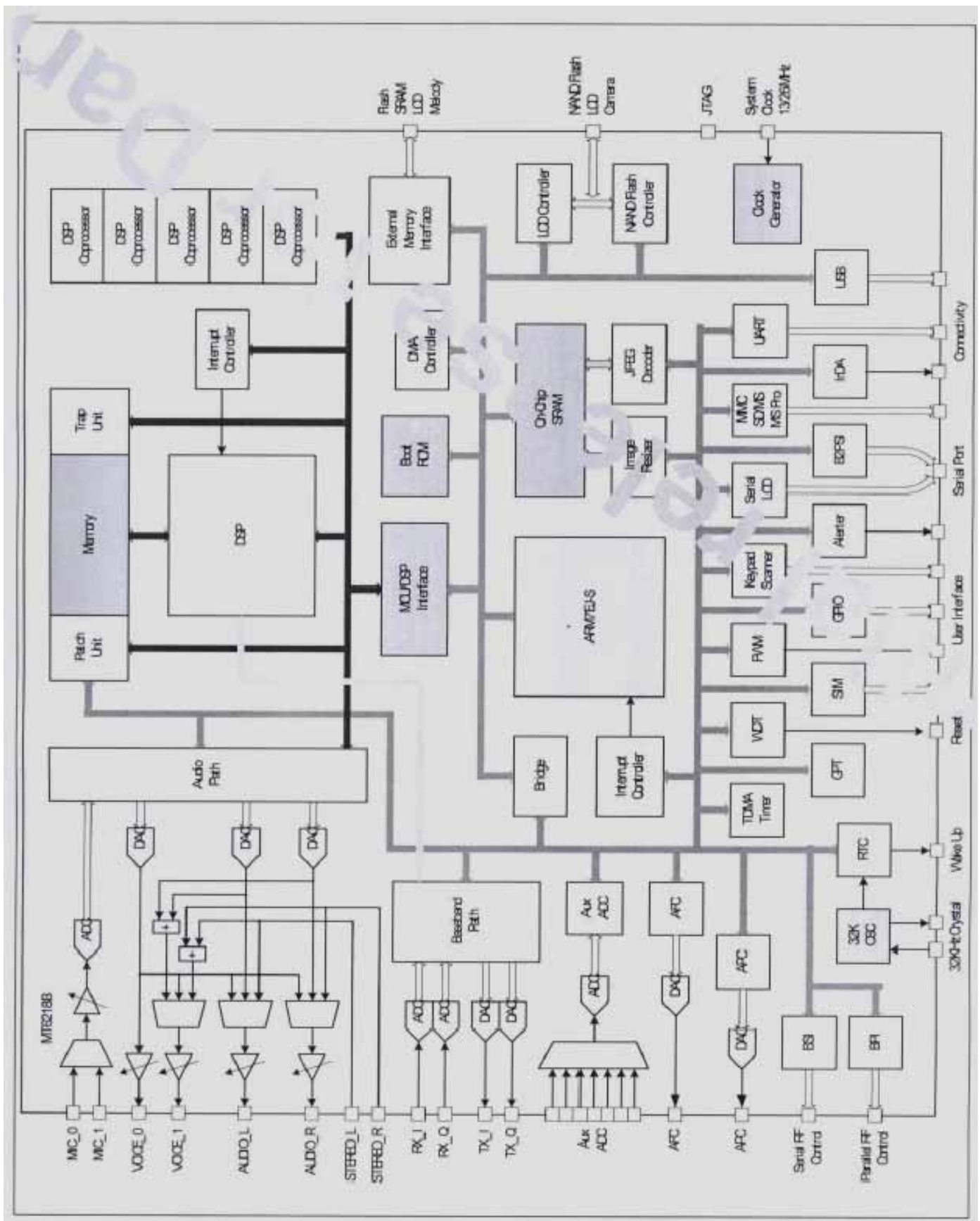


Figure 6.2: MT6218B Block Diagram

6.2. G1800 RF Block Diagram

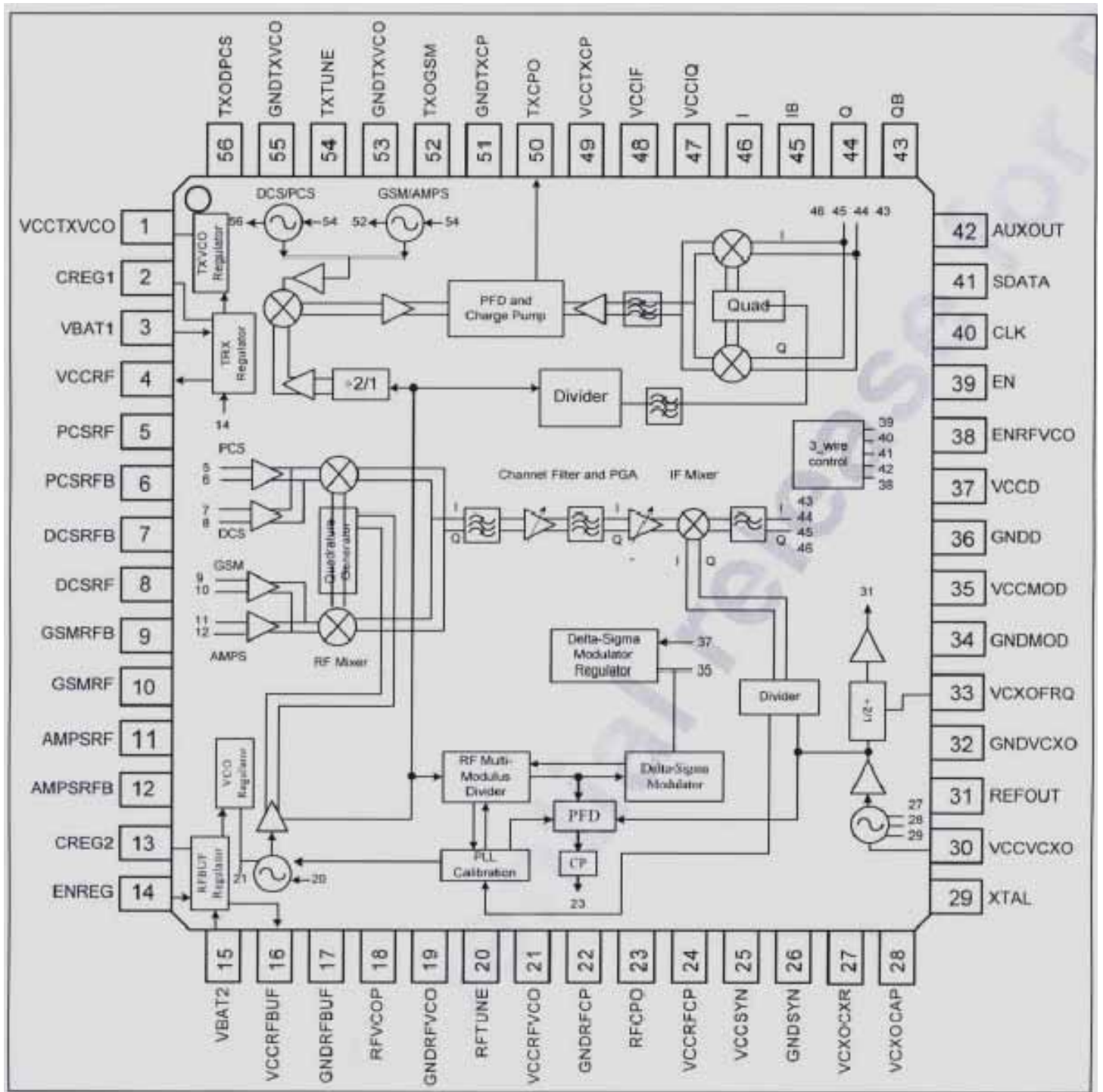
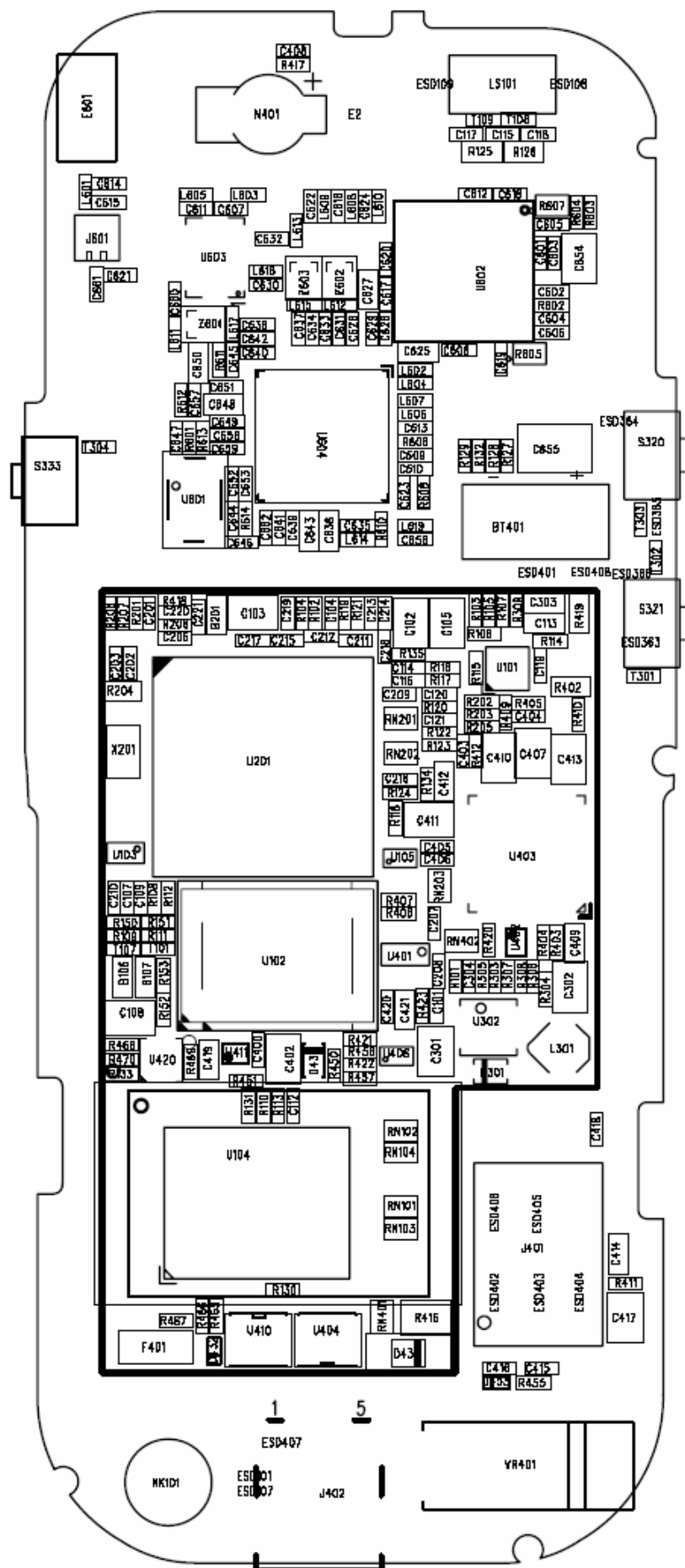
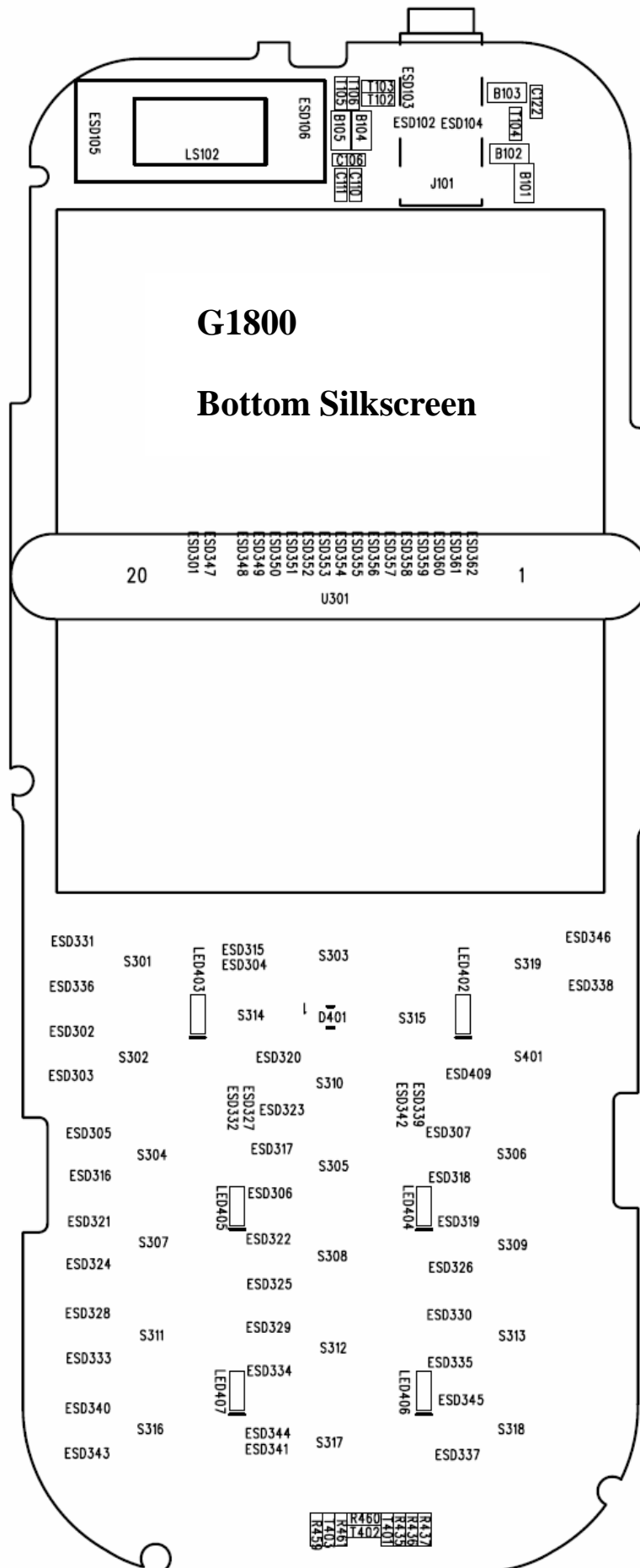


Figure 6.3: MT6219 Block Diagram

7. G1800 PCB PLACEMENT





8. SPPL list

ITEM	Darts P/No.	Description	Mini. Q'ty	Location
	Chip Set			
1	D1TRMT6218B040	RISC PROCSSOR MT6218B TFBGA 274P	100	U201
2	D1TTMT6129N000	RF TRANSCEIVER MT6129N QFN 56P	100	U604
3	D1V2MT63050000	PM MT6305 QFN48 48P	100	U403
	Memory			
4	D1TMT58DVM9260	NAND FLASH 512Mb	200	U104
5	D1TMSPL064JA20	Flash+Sram 56P 64+16	200	U102
	PCBA Commodity			
6	D1C0M0305CC101	C 3p 50V C 0402 C0G TDK	500	C662
7	D1C0M0605CC101	C 6p 50V C 0402 C0G TDK	500	C603
8	D1C0M0R55CC101	C 0.5p 50V C 0402 C0G TDK	500	C601
9	D1C0M1005DC101	C 10p 50V D 0402 C0G TDK	500	C626,C628,C638,C642,C649,C653
10	D1C0M1015JC101	C 100p 50V J 0402 C0G TDK	500	C106,C115,C617
11	D1C0M1025KC301	C 1n 50V K 0402 X7R TDK	500	C206,C606,C639,C652
12	D1C0M1034KC301	C 10n 25V K 0402 X7R TDK	500	C220,C221,C400,C620,C644
13	D1C0M1043KC401	C 100n 16V K 0402 X5R TDK	500	C101,C104,C107,C109,C207~C211, C213,C214,C216~C219,C403,C405, C406,C408,C420,C623,C629,C635, C640,C647
14	D1C0M1051KC401	C 1U 6.3V K 0402 X5R TDK	500	C122
15	D1C0M1051KF401	C 1u 6.3V K 0603 X5R TDK	500	C303
16	D1C0M1051ZC201	C 1u 6.3V Z 0402 Y5V TDK	500	C304
17	D1C0M1055ZH201	C 1u 50V Z 0805 Y5V TDK	500	C301
18	D1C0M1061KH411	C 10u 6.3V K 0805 X5R T=0.95 TDK	500	C105,C654,C102,C411
19	D1C0M1205JC101	C 12p 50V J 0402 C0G TDK	500	L603
20	D1C0M1535KC301	C 1.5n 50V K 0402 X7R TDK	500	C657
21	D1C0M1R55BC101	C 1.5p 50V B 0402 C0G TDK	500	L602
22	D1C0M2205JC101	C 22p 50V J 0402 C0G TDK	500	C202,C203,C616,C621,C622,C645, C651
23	D1C0M2215JC101	C 220p 50V J 0402 C0G TDK	500	C605,C646
24	D1C0M2251KF401	C 2.2u 6.3V K 0603 X5R TDK	500	C113,C409,C412,C414,C419,C421, C625,C627,C636,C643,C648,C650
25	D1C0M2253ZH201	C 2.2uF 16V Z 0805 Y5V TDK	500	C417

26	D1C0M2705JC101	C 27p 50V J 0402 C0G TDK	500	C121,C602,C604,C656
27	D1C0M2R25CC101	C 2.2p 50V C 0402 COG TDK	500	C634,C637
28	D1C0M3305JC101	C 33p 50V J 0402 C0G TDK	500	C110,C111,C117,C118
29	D1C0M4722KH411	C 4.7u 10V K 0805 X5R T=0.85 TDK	500	C103,C108,C302,C402,C407,C410, C413
30	D1C0M4725KC301	C 4.7n 50V K 0402 X7R TDK	500	C212
31	D1C0M4734KC301	C 47n 25V K 0402 X7R TDK	500	C215
32	D1C0M5632KC401	C 56n 10V K 0402 X5R TDK	500	C114,C116
33	D1C0T1071MN000	T C LOW ESR 100u 6.3V M 3528	500	C655
34	D1E01076304000	FUSE 0.75A 6V SMD1206P075TS	500	F401
35	D1F20750A20004	EMIFIL BLM15BB750SN1D 75 +-25% 0402	500	L608,L609,L614,L619
36	D1L1101000FB02	POWER INDUCTOR 10uH +-30% SMT CDRH2D11-1	500	L301
37	D1L2001500B104	CHIP COIL LQG15HN15NJ02D 0402 MURATA	500	L607
38	D1L2001800J104	CHIP COIL LQG15HN18NJ02D 0402 MURATA	500	L617
39	D1L2005N60G104	CHIP COIL LQG15HN5N6S02D 0402 MURATA	500	L605,L615
40	D1L201N500S104	CHIP COIL LQG15HN1N5S02D 0402 MURATA	500	C630
41	D1L206N800J104	CHIP COIL LQG15HN6N8J02D 0402 MURATA	500	L604
42	D1L209N100J104	CHIP COIL LQG15HN9N1J02D 0402 MURATA	500	L606
43	D1N40000005000	ATTENUATOR 5DB+/-0.3dB	500	R605,R607
44	D1V1LV50402M07	VCE MLVS0402M07 +-20% 7V 0402	500	T101~T109,T301~T303
45	D1R0C0000J1300	R 0 +-5% 1/10W 0603	500	B101~B107,B201,R125,R126,R402, R419
46	D1R0C0000J2200	R 0 +-5% 1/16W 0402	500	C660,L601,R101,R114,R118,R122, R304,R308,R309,R409~R412,R423, R466
47	D1R0C0030J2200	R 3 +-5% 1/16W 0402	500	R455
48	D1R0C0101J2200	R 100 +-5% 1/16W 0402	500	R601
49	D1R0C0102J2200	R 1K +-5% 1/16W 0402	500	R102,R104,R108,R112,R602,R610, R611,R614
50	D1R0C0103F2200	R 10K 1% 1/16W 0402	500	R303

51	D1R0C0103J2200	R 10K +-5% 1/16W 0402	500	R450,R451,R603,R134
52	D1R0C0104J2200	R 100K +-5% 1/16W 0402	500	R201,R206,R403~R406,R456,R457
53	D1R0C0105J2200	R 1M +-5% 1/16W 0402	500	R208
54	D1R0C0121J2200	R 120 +-5% 1/16W 0402	500	R420
55	D1R0C0152J2200	R 1.5K +-5% 1/16W 0402	500	R109,R111,R120,R461
56	D1R0C0153J2200	R 15K +-5% 1/16W 0402	500	R105,R306,R604
57	D1R0C0183F2200	R 18K 1% 1/16W 0402	500	R119
58	D1R0C0201J2200	R 200 +-5% 1/16W 0402	500	R421,R422,R435~R437
59	D1R0C0220J2200	R 22 +-5% 1/16W 0402	500	R307
60	D1R0C0243F2200	R 24K +-1% 1/16W 0402	500	R407,R418
61	D1R0C0270J2200	R 27 +-5% 1/16W 0402	500	R495,R460
62	D1R0C033BF4500	R 0.33 +-1% 1/4W 0805	500	R416
63	D1R0C0364J2200	R 360K +-5% 1/16W 0402	500	R127~R129,R132
64	D1R0C0392F2200	R 3.9K +-1% 1/16W 0402	500	R305,R417
65	D1R0C0394J2200	R 390K +-5% 1/16W 0402	500	R107
66	D1R0C0431J2200	R 430 +-5% 1/16W 0402	500	R103,R106
67	D1R0C0473F2200	R 47K +-1% 1/16W 0402	500	R116,R117
68	D1R0C0683J2200	R 68K +-5% 1/16W 0402	500	R115
69	D1R0C0823F2200	R 82K 1% 1/16W 0402	500	R121,R465
70	D1RA80104FA400	R/A 8P4R 100K +-1% 63mW 0804	500	RN401,RN203
	RF			
71	D1F10942M50503	RF FILTER 942.5MHZ 5P F5EB-942M50-B28C	500	Z601
72	D1F11842M50503	RF FILTER 1842.5MHZ 5P F6EB-1G8425-B2BC	500	Z603
73	D1V3RF31460000	POWER AMPLIFIER RF3146 LFM 48P	500	U602
74	D1V7ESHSC085TK	TR SWITCH ESHS-C085TK	500	U603
75	D1Y03260501101	X'TAL OSC 26MHZ 3V+-0.5% HOKURIKU	500	U601
	BB			
76	D1A2EMD2000010	DOUBLE TRANSISTORS EMD2 EMT6 NPN+PNP	500	U411
77	D1A2EMD6000010	DOUBLE TRANSISTORS EMD6 PNP+NPN	500	U402
78	D1A3FDG6303N20	MOSFET FDG6303N SC70-6 6P	500	U105,U406
79	D1A3SI3443DV10	MOSFET Si3443DV SOT-6	500	U404,U410
80	D1D01072000000	ZENER DIODE PDZ5.6B SOD323	500	D430
81	D1D02012000100	DIODE RB520S-30 <0.5A/30V EMD2	500	D432,D455
82	D1D02022000100	DIODE RB551V-30 0.5A/25-30V UMD2	500	D301
83	D1D02024000003	SCHOTTKY DIODE RB160M-30 SOD-106	500	D433

		1A/30V		
84	D1D032E1000102	LED L=YG HT-191GQ5-DT	500	LED2~LED7,D401
85	D1V3TPA2005D10	AUDIO AMPLIFIER TPA2005D1GQYR 15P	500	U101
86	D1V6APL515133B	DC-DC CONV APL5151-33BC SOT-23-5	500	U401
87	D1V6SC10400000	DC-DC CONV WHITE LED DRIVER SC104	500	U302
88	D1VDNC7SZ19P60	DECODER NC7SZ19P6X SC70	500	U103
89	D1Y02328201100	TUNING FORK 32.768KHZ 20ppm 12.5pF SMD	500	X201
	EME -SMT			
90	D1B20125R06001	BACKUP BATT D4.8xH1.4mm 0.06F XC414-II06	200	N401
91	D1W01010600101	SIDE KEY 20MA/12V 2P	200	S320.S321,S333
92	D1W03010400101	RF TEST SWITCH 6000MHz 2W 50 OHM MS156	200	J601
93	D30BCPHX000000	BASE BAND COVER FOR PHX	200	
94	D30BFPHX000000	BASE BAND FRAME FOR PHX	200	
95	D30RCPHX000000	RF COVER FOR PHX	200	
96	D30RFPHX000000	RF FRAME FOR PHX	200	
97	D3C01010600102	SIM CARD CONN PITCH=2.54mm 6P 217-010-60	200	J401
98	D3C02A02000006	SPEK CONN P=3mm 2P CBE-2809-2258H POGOPI	200	E601,LS101
99	D3CPG001000012	POGO PIN 1P CDR-5815-2961	200	E2
100	D3JEP004000001	EARPHONE JACK 4P 317-925-202	200	J101
101	D3JMU0050000005	MINI USB CONN 5P US25R05-SBP	200	J402
	Antenna Ass'y			
102	DS102PHXLG0S00	Antenna Ass'y (w Louder SPK)	100	
	Top case Ass'y			
103	D1K12012100201	Receiver Panasonic - EASG1D501E2	100	
104	D3501PHXLG00S0	Pre-sub top case Ass'y LG Silver (w LENS)	100	
105	D31DPPHXG00000	Deco. Plate for Play key Grey	100	
106	D31DPPHXG00010	Deco. Plate for Volume key Grey	100	
107	D31VKPHX000000	Volume side key	100	
108	D31SCPHX000000	MP3 key	100	
109	D3KKPPHXRUS100	Keypad RUS Silver	100	
110	D30DMPHX010000	Metal dome	100	

	Bottom case Ass'y			
111	D1G01000300106	Vibrator 3V	100	
112	D31BMPHXS1LG00	BOTTOM CASE Ass'y Silver	100	
113	D3C03203000102	Battery connector Pitch=2.5mm 3Pin PA08303	100	
	ME Ass'y			
114	D1M01584430201	MIC. FPT-22718-3	100	
115	D1S01012000102	LCM STN 128x128dot LKC34TMA9Y	100	
116	Apply no.	Battery Cover LG	100	
117	D3113RG1CHI000	RF_SW_CAP rubber Grey	100	
118	D3231163835210	Screw (M1.6*3.8) , ZN , White	1000	
	Accessory			
119	TBD	Battery Pack LG	50	
120	TBD	Travel Charger (Russia standard) LG	50	
121	D7001000000001	USB cable (MP3 download cable)	50	
122	D70050000000300	Regular Stereo Earmic	50	
123				